4. (Amended) Method according to claim 1, where the target gene is expressed in eukaryotic cells.

5. (Amended) Method according to claim 1, where the target gene is selected from the following group: oncogene, cytokin gene, Id-protein gene, development gene, prion gene.

6. (Amended) Method according to claim 1, where the target gene is expressed in pathogenic organisms, preferably in plasmodia.

7. (Amended) Method according to claim 1, where the target gene is part of a virus or viroid.

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10. (Amended) Method according to claim 1, where segments of the dsRNA are in double-stranded form.

11. (Amended) Method according to claim 1, where the ends of the dsRNA are modified in order to counteract degradation in the cell or dissociation into the single strands.

12. (Amended) Method according to claim 1, where the cohesion of the double-stranded structure, which is caused by the complementary nucleotide pairs, is increased by at least one, preferably two, further chemical linkage(s).

13. (Amended) Method according to claim 1, where the chemical linkage is formed by a covalent or ionic bond, a hydrogen bond, hydrophobic interactions, preferably van-der-Waals or stacking interactions, or by metal-ion coordination.

14. (Amended) Method according to claim 1, where the chemical linkage is generated at at least one, preferably both, ends of the double-stranded structure.

15. (Amended) Method according to claim 1, where the chemical linkage is formed by means of one or more compound groups, the compound groups preferably being

poly(oxyphosphinicooxy-1,3-propanediol) and/or polyethylene glycol chains.

16. (Amended) Method according to claim 1, where the chemical linkage is formed by purine analogs used in the double-stranded structure in place of purines.

17. (Amended) Method according to claim 1, where the chemical linkage is formed by azabenzene units introduced into the double-stranded structure.

18. (Amended) Method according to claim 1, where the chemical linkage is formed by branched nucleotide analogs used in the double-stranded structure in place of nucleotides.

19. (Amended) Method according to claim 1, where at least one of the following groups is used for generating the chemical linkage: methylene blue; bifunctional groups, preferably bis(2-chloroethyl)amine; N-acetyl-N'-(p-glyoxylbenzoyl)cystamine; 4-thiouracil; psoralene.

20. (Amended) Method according to claim 1, where the chemical linkage is formed by thiophosphoryl groups provided at the ends of the double-stranded structure.

21. (Amended) Method according to claim 1, where the chemical linkage at the ends of the double-stranded structure is formed by triple-helix bonds.

22. (Amended) Method according to claim 1, where at least one 2'-hydroxyl group of the nucleotides of the dsRNA in the double-stranded structure is replaced by a chemical group, preferably a 2'-amino or a 2'-methyl group.

23. (Amended) Method according to claim 1, where at least one nucleotide in at least one strand of the double-stranded structure is a locked nucleotide with a sugar ring which is chemically modified, preferably by a 2'-O, 4'-C-methylene bridge.

24. (Amended) Method according to claim 1, where the dsRNA is bound to, associated with or surrounded by, at least one viral coat protein which originates from a virus, is derived therefrom or has been prepared synthetically.

25. (Amended) Method according to claim 1, where the coat protein is derived from polyomavirus.

26. (Amended) Method according to claim 1, where the coat protein contains the polyomavirus virus protein 1 (VP1) and/or virus protein 2 (VP2).

27. (Amended) Method according to claim 1, where, when a capsid or capsid-type structure is formed from the coat protein, one side faces the interior of the capsid or capsid-type structure.

28. (Amended) Method according to claim 1, where one strand of the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

29. (Amended) Method according to claim 1, where the cell is a vertebrate cell or a human cell.

30. (Amended) Method according to claim 1, where at least two dsRNAs which differ from each other are introduced into the cell, where at least segments of one strand of each dsRNA are complementary to in each case one of at least two different target genes.

31. (Amended) Method according to claim 1, where one of the target genes is the PKR gene.

34. (Amended) Medicament according to claim 32, where the dsRNA is enclosed by natural viral capsids or by chemically or enzymatically produced artificial capsids or structures derived therefrom.

35. (Amended) Medicament according to claim 32, where the target gene can be expressed in eukaryotic cells.

36. (Amended) Medicament according to claim 32, where the target gene is selected from

the following group: oncogene, cytokin gene, Id-protein gene, development gene, prion gene.

37. (Amended) Medicament according to claim 32, where the target gene can be expressed in pathogenic organisms, preferably in plasmodia.

38. (Amended) Medicament according to claim32, where the target gene is part of a virus or viroid.

41. (Amended) Medicament according to claim 32, where segments of the dsRNA are in double-stranded form.

42. (Amended) Medicament according to claim 32, where the ends of the dsRNA are modified in order to counteract degradation in the cell or dissociation into the single strands.

43. (Amended) Medicament according to claim 32, where the cohesion of the double-stranded structure, which is caused by the complementary nucleotide pairs, is increased by at least one, preferably two, further chemical linkage(s).

44. (Amended) Medicament according to claim 32, where the chemical linkage is formed by a covalent or ionic bond, a hydrogen bond, hydrophobic interactions, preferably van-der-Waals or stacking interactions, or by metal-ion coordination.

45. (Amended) Medicament according to claim 32, where the chemical linkage is generated at at least one, preferably both, ends of the double-stranded structure.

46. (Amended) Medicament according to claim 32, where the chemical linkage is formed by means of one or more compound groups, the compound groups preferably being poly(oxyphosphinicooxy-1,3-propanediol) and/or polyethylene glycol chains.

47. (Amended) Medicament according to claim 32, where the chemical linkage is formed by purine analogs used in the double-stranded structure in place of purines.

48. (Amended) Medicament according to claim 32, where the chemical linkage is formed by azabenzene units inserted into the double-stranded structure.

49. (Amended) Medicament according to claim 32, where the chemical linkage is formed by branched nucleotide analogs used in the double-stranded structure in place of nucleotides.

50. (Amended) Medicament according to claim 32, where at least one of the following groups is used for generating the chemical linkage: methylene blue; bifunctional groups, preferably bis(2-chloroethyl)amine; N-acetyl-N'-(p-glyoxylbenzoyl)cystamine; 4-thiouracil; psoralene.

51. (Amended) Medicament according to claim 32, where the chemical linkage is formed by thiophosphoryl groups provided at the ends of the double-stranded structure.

52. (Amended) Medicament according to claim 32, where the chemical linkage are [sic] triple-helix bonds provided at the ends of the double-stranded structure.

53. (Amended) Medicament according to claim 32, where at least one 2'-hydroxyl group of the nucleotides of the dsRNA in the double-stranded structure is replaced by a chemical group, preferably a 2'-amino or a 2'-methyl group.

54. (Amended) Medicament according to claim 32, where at least one nucleotide in at least one strand of the double-stranded structure is a locked nucleotide with a sugar ring which is chemically modified, preferably by a 2'-O, 4'-C-methylene bridge.

55. (Amended) Medicament according to claim 32, where the dsRNA is bound to, associated with or surrounded by, at least one viral coat protein which originates from a virus, is derived therefrom or has been prepared synthetically.

56. (Amended) Medicament according to claim 32, where the coat protein is derived from the polyomavirus.

57. (Amended) Medicament according to claim 32, where the coat protein contains the polyomavirus virus protein 1 (VP1) and/or virus protein 2 (VP2).

58. (Amended) Medicament according to claim 32, where, when a capsid or capsid-type structure is formed from the coat protein, one side faces the interior of the capsid or capsid-type structure.

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59. (Amended) Medicament according to claim 32, where one strand of the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

60. (Amended) Medicament according to claim 32, where the cell is a vertebrate cell or a human cell.

61. (Amended) Medicament according to claim 32, where at least two dsRNAs which differ from each other are contained in the medicament, where at least segments of one strand of each dsRNA are complementary to in each case one of at least two different target genes.

65. (Amended) Active ingredient according to claim 63, where segments of the dsRNA are in double-stranded form.

66. (Amended) Active ingredient according to claim 63, where the ends of the dsRNA are modified in order to counteract degradation in the cell or dissociation into the single strands.

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67. (Amended) Active ingredient according to claim 63, where the cohesion of the double-stranded structure, which is caused by the complementary nucleotide pairs, is increased by at least one, preferably two, further chemical linkage(s).

68. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by a covalent or ionic bond, a hydrogen bond, hydrophobic interactions, preferably van-der-Waals or stacking interactions, or by metal-ion coordination.

69. (Amended) Active ingredient according to claim 63, where the chemical linkage is

generated at at least one, preferably both, ends of the double-stranded structure.

70. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by means of one or more compound groups, the compound groups preferably being poly(oxyphosphinicooxy-1,3-propanediol) and/or polyethylene glycol chains.

71. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by purine analogs used in the double-stranded structure in place of purines.

72. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by azabenzene units inserted into the double-stranded structure.

73. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by branched nucleotide analogs used in the double-stranded structure in place of nucleotides.

74. (Amended) Active ingredient according to claim 63, where at least one of the following groups is used for generating the chemical linkage: methylene blue; bifunctional groups, preferably bis(2-chloroethyl)amine; N-acetyl-N'-(p-glyoxylbenzoyl)cystamine; 4-thiouracil; psoralene.

75. (Amended) Active ingredient according to claim 63, where the chemical linkage is formed by thiophosphoryl groups provided at the ends of the double-stranded structure.

76. (Amended) Active ingredient according to claim 63, where the chemical linkage are triple-helix bonds provided at the ends of the double-stranded structure.

77. (Amended) Active ingredient according to claim 63, where at least one 2'-hydroxyl group of the nucleotides of the dsRNA in the double-stranded structure is replaced by a chemical group, preferably a 2'-amino or a 2'-methyl group.

78. (Amended) Active ingredient according to claim 63, where at least one nucleotides at least one strand of the double-stranded structure is a locked nucleotide with a sugar ring which is chemically modified, preferably by a 2'-O, 4'-C-methylene bridge.

79. (Amended) Active ingredient according to claim 63, where one strand of the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

80. (Amended) Active ingredient according to claim 63, where at least two dsRNAs which differ from each other are contained in the active ingredient, where at least segments of one strand of each dsRNA are complementary to in each case one of at least two different target genes.

83. (Amended) Use according to claim 81, where the dsRNA is enclosed by natural viral capsids or by chemically or enzymatically produced artificial capsids or structures derived therefrom.

84. (Amended) Use according to claim 81, where the target gene can be expressed in eukaryotic cells.

85. (Amended) Use according to claim 81, where the target gene is selected from the following group: oncogene, cytokin gene, Id-protein gene, development gene, prion gene.

86. (Amended) Use according to claim 81, where the target gene can be expressed in pathogenic organisms, preferably in plasmodia.

87. (Amended) Use according to claim 81, where the target gene is part of a virus or viroid.

90. (Amended) Use according to claim 81, where segments of the dsRNA are in double-stranded form.

91. (Amended) Use according to claim 81, where the ends of the dsRNA are modified in

order to counteract degradation in the cell or dissociation into the single strands.

92. (Amended) Use according to claim 81, where the cohesion of the double-stranded structure, which is caused by the complementary nucleotide pairs, is increased by at least one, preferably two, further chemical linkage(s).

93. (Amended) Use according to claim 81, where the chemical linkage is formed by a covalent or ionic bond, a hydrogen bond, hydrophobic interactions, preferably van-der-Waals or stacking interactions, or by metal-ion coordination.

94. (Amended) Use according to claim 81, where the chemical linkage is generated at at least one, preferably both, ends of the double-stranded structure.

95. (Amended) Use according to claim 81, where the chemical linkage is formed by means of one or more compound groups, the compound groups preferably being poly(oxyphosphinicooxy-1,3-propanediol) and/or polyethylene glycol chains.

96. (Amended) Use according to claim 81, where the chemical linkage is formed by purine analogs used in the double-stranded structure in place of purines.

97. (Amended) Use according to claim 81, where the chemical linkage is formed by azabenzene units introduced into the double-stranded structure.

98. (Amended) Use according to claim 81, where the chemical linkage is formed by branched nucleotide analogs used in the double-stranded structure in place of nucleotides.

99. (Amended) Use according to claim 81, where at least one of the following groups is used for generating the chemical linkage: methylene blue; bifunctional groups, preferably bis(2-chloroethyl)amine; N-acetyl-N'-(p-glyoxylbenzoyl)cystamine; 4-thiouracil; psoralene.

100. (Amended) Use according to claim 81, where the chemical linkage is formed by thiophosphoryl groups attached to the ends of the double-stranded structure.

101. (Amended) Use according to claim 81, where the chemical linkage at the ends of the double-stranded structure is formed by triple-helix bonds.

102. (Amended) Use according to claim 81, where at least one 2'-hydroxyl group of the nucleotides of the dsRNA in the double-stranded structure is replaced by a chemical group, preferably a 2'-amino or a 2'-methyl group.

103. (Amended) Use according to claim 81, where at least one nucleotide in at least one strand of the double-stranded structure is a locked nucleotide with a sugar ring which is chemically modified, preferably by a 2'-O, 4'-C-methylene bridge.

104. (Amended) Use according to claim 81, where the dsRNA is bound to, associated with or surrounded by, at least one viral coat protein which originates from a virus, is derived therefrom or has been prepared synthetically.

105. (Amended) Use according to claim 81, where the coat protein is derived from polyomavirus.

106. (Amended) Use according to claim 81, where the coat protein contains the polyomavirus virus protein 1 (VP1) and/or virus protein 2 (VP2).

107. (Amended) Use according to claim 81, where, when a capsid or capsid-type structure is formed from the coat protein, one side faces the interior of the capsid or capsid-type structure.

108. (Amended) Use according to claim 81, where one strand of the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

109. (Amended) Use according to claim 81, where the cell is a vertebrate cell or a human cell.

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110. (Amended) Use according to claim 81, where at least two dsRNAs which differ from each other are used, where at least segments of one strand of each dsRNA are complementary to in each case one of at least two different target genes.

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112. (Amended) Use according to claim 81, where the medicament is injectable into the bloodstream or into the interstitium of the organism to undergo therapy.

113. (Amended) Use according to claim 81, where the dsRNA is taken up into bacteria or microorganisms.

116. (Amended) Use according to claim 114, where the target gene is selected from the following group: oncogene, cytokin gene, Id-protein gene, development gene, prion gene.

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117. (Amended) Use according to claim 114, where the target gene can be expressed in pathogenic organisms, preferably in plasmodia.

118. (Amended) Use according to claim 114, where the target gene is part of a virus or viroid.

121. (Amended) Use according to claim 114, where segments of the dsRNA are in double-stranded form.

122. (Amended) Use according to claim 114, where one strand of the dsRNA is complementary to the primary or processed RNA transcript of the target gene.

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123. (Amended) Use according to claim 114, where the cell is a vertebrate cell or a human cell.

124. (Amended) Use according to claim 114, where at least two dsRNAs which differ from each other are used, where at least segments of one strand of each dsRNA are complementary to in each case one of at least two different target genes.